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Andrew M. Calderon  
Greenblum and Bernstein P.L.C.  
1950 Roland Clarke Place  
Reston, VA 20191

EXAMINER
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RAYYAN, SUSAN F

ART UNIT	PAPER NUMBER
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2167

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/644,295

Applicant(s)

GUPTA, SANJAY

Examiner

Susan F. Rayyan

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/21/2003
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Response to Arguments***

1. Applicant's arguments filed May 30, 2006 have been fully considered but they are not persuasive.

Information Disclosure Statement filed on August 21, 2003 has been considered.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "non-relational database" (claims 1,18,25), "a server provides access and management control to a non-relational database", "reducing the view index size", "indexed at run time" are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues Yoshiyama does not teach marking a second set of columns within a view of a database as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns. Examiner finds Yoshiyama does teach this limitation in a manner similar to the Applicant's claim language. Yoshiyama teaches generating an index based on retrieval conditions. The retrieval conditions which are not met and not used to generate the index would correspond to a marking of a second set of columns as already sorted.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Shakib does not explicitly teach marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns. Yoshiyama does teach this limitation at parg. 35 lines 6-15 to speed up data retrieval at parg.10. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to speed up data retrieval at parg.10.

Applicant's arguments with respect to claims 7-17 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues prior art of record does not teach assigning a first set of columns of a view of data in a cache. Examiner finds Wilkes does teach this limitation in

a manner similar to Applicant's claim language, a storage system cache divided into a number of segments for storing data at paragraph 62 and paragraph 64).

With regard to claim 24, Applicant argues prior art of record does not teach "permit clients to see the second set of columns and issue a query on the second set of columns". Shakib does teach this limitation at column 3, lines 43-49, remaining set of fields are used for viewing and sorting and column 4, line 1, indexes are created based upon user demand).

#### **DETAILED ACTION**

2. Claims 1-25 are pending.

#### ***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on August 21, 2003 was filed before First Office Action. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

the claimed invention is directed to non-statutory subject matter.

Claims 1-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

**MPEP 2106 IV.B.2. (b)** A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. *Schrader*, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application.

Claims 1,7,18,25 in view of the above cited MPEP sections, are not statutory because they merely recite a number of computing steps without producing any tangible result and/or being limited to a practical application.

Claim 1 recites "sorting and categorizing a first set of columns within a view of the database" and "marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns". The claim does not provide a tangible result. A tangible result, for example, would display or report or output data to the user.

Claim 7,18,25 recites "sorting and categorizing a first set of columns within a view of the ... database", "marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns" and "sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least

one column". The claim does not provide a tangible result. A tangible result, for example, would display or report or output data to the user.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-6,18,20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shakib et al (US 5,752,025) and Yoshiyama et al (US 2002/0120617).**

As per claim 1 Shakib teaches:

sorting and categorizing a first set of columns within a view of the database at col.3, lines 65, bridging to, col.4, line 3.

Shakib does not explicitly teach marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns. Yoshiyama does teach this limitation at parg. 35 lines 6-15 to speed up data retrieval at parg.10. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to speed up data retrieval at parg.10.

As per claim 2 same as claim arguments above and Yoshiyama teaches:  
further comprising the step of sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column at parg. 35, lines 10-12.

As per claim 3 same as claim arguments above and Yoshiyama teaches:  
including establishing a mini-index indexing the at least one column of the second set of columns at parg. 46, lines 11-17.

As per claim 4 same as claim arguments above and Yoshiyama teaches:  
including accessing the mini-index to provide increased performance at parg. 46, lines 11-17.

As per claim 5 same as claim arguments above and Yoshiyama teaches:  
including monitoring parameters of the mini-index, and as a result, performing one of deleting, updating, and recreating the mini-index at parg. 46, lines 11-17.

As per claim 6 same as claim arguments above and Yoshiyama teaches:  
wherein the parameters include at least one of a number of sorted columns, a number of categorized columns, a number of records that can be accessed in a view, an average number of records per category, and an average number of records per hierarchy at parg. 46, lines 15-17.



As per claim 20 same as claim arguments above and Yoshiyama teaches:

establishing a mini-index indexing the at least one column of the second set of columns at parg. 46, lines 11-17.

As per claim 21, same as claim arguments above and Shakib teaches;

Including a component to access the mini-index by a server ( column 4, lines 42-49).

As per claim 22 same as claim arguments above and Yoshiyama teaches:

monitor parameters of the mini-index, and as a result, performing one of deleting, updating, and recreating the mini-index at parg. 46, lines 11-17.

As per claim 23 same as claim arguments above and Yoshiyama teaches:

wherein the parameters include at least one of a number of sorted columns, a number of categorized columns, a number of records that can be accessed in a view, an average number of records per category, and an average number of records per hierarchy at parg. 46, lines 15-17.

As per claim 24, same as claim arguments above and Shakib teaches:

...permits clients to see the second set of columns and to issue a query on the at least one column of the second set of columns (at column 3, lines 43-49, remaining set of fields are used for viewing and sorting and column 4, line 1, indexes are created based upon user demand) .

Claims 18,25 are rejected based on the same rationale as claims 1-2.

**7. Claim 7,10-13,17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shakib et al (US 5,752,025) and Yoshiyama et al (US 2002/0120617) and further in view of US Patent Number 6,065,011) issued to Bulusu et al ("Bulusu").**

As per claim 7 Shakib teaches:

sorting and categorizing a first set of columns within a view of the ... database at col.3, lines 65, bridging to, col.4, line 3.

Shakib does not explicitly teach marking a second set of columns within the view as if the second set of columns were already sorted and categorized prior to actual sorting and categorizing of the second set of columns, the second set of columns including all columns exclusive of the first set of columns and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column. Yoshiyama does teach this limitation at parg. 35 lines 6-15 to speed up data retrieval at parg.10 and sorting and categorizing at least one column of the second set of columns in response to performing a query on the at least one column at parg. 35, lines 10-12 to speed up data retrieval at parg.10. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to speed up data retrieval at parg.10.

Shakib teaches a database. Shakib and Yoshiyama do not explicitly teach a non-relational database. Bulusu does teach a non-relational database at column 2, lines 35-45 and Figure 5 to manipulate categorized datasets without the burdensome amount of processing time and resources at column 3, lines 18-20. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shakib and Yoshiyama with a non-relational database to manipulate categorized datasets without the burdensome amount of processing time and resources at column 3, lines 18-20.

As per claim 10 same as claim arguments above and Yoshiyama teaches:  
establishing a mini-index indexing the at least one column of the second set of columns at parag. 46, lines 11-17.

As per claim 11 same as claim arguments above and Yoshiyama teaches:  
including accessing the mini-index to provide increased performance at parag. 46, lines 11-17.

As per claim 12 same as claim arguments above and Yoshiyama teaches:  
including monitoring parameters of the mini-index, and as a result, performing one of deleting, updating, and recreating the mini-index at parag. 46, lines 11-17.

As per claim 13 same as claim arguments above and Yoshiyama teaches:  
wherein the parameters include at least one of a number of sorted columns, a number of categorized columns, a number of records that can be accessed in a view, an average number of records per category, and an average number of records per

hierarchy at parg. 46, lines 15-17.

As per claim 17, same as claim arguments above and Shakib teaches:

...permits clients to see the second set of columns and to issue a query on the at least one column of the second set of columns (at column 3, lines 43-49, remaining set of fields are used for viewing and sorting and column 4, line 1, indexes are created based upon user demand) .

**8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shakib et al (US 5,752,025) and Yoshiyama et al (US 2002/0120617) and further in view of Wilkes et al (US 2003,0088739).**

As per claim 19 same as claim arguments above and Shakib and Yoshiyama do not explicitly teach ...including a component to sort and categorize the at least one column of the second set in a portion of a cache and assign the first set of columns to another portion of the cache. Wilkes does teach this limitation at parg. 62, 64 and fig. 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to improve the rate at which the insertion point in the cache metadata structure may be found at parg. 65, lines 1-3.

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**9. Claims 8-9,14-16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Shakib et al (US 5,752,025) and Yoshiyama et al (US 2002/0120617) and US Patent Number 6,065,011) issued to Bulusu et al ("Bulusu") and further in view of Wilkes et al (US 2003,0088739) and further in view of Wilkes et al (US 2003,0088739).**

As per claim 8 same as claim arguments above and Shakib and Yoshiyama and Bulusu do not explicitly teach ... assigning the first set of columns to a portion of a cache. Wilkes does teach this limitation at parg. 62, 64 and fig. 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to improve the rate at which the insertion point in the cache metadata structure may be found at parg. 65, lines 1-3.

As per claim 9 same as claim arguments above and Shakib and Yoshiyama and Bulusu do not explicitly teach ... in another portion of the cache. Wilkes does teach this limitation at parg. 62, 64 and fig. 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to improve the rate at which the insertion point in the cache metadata structure may be found at parg. 65, lines 1-3.

As per claim 14 same as claim arguments above and Shakib and Yoshiyama and Bulusu do not explicitly teach ... including maintaining the first set of columns in a

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portion of cache. Wilkes does teach this limitation at parg. 62, 64 and fig. 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to improve the rate at which the insertion point in the cache metadata structure may be found at parg. 65.

As per claim 15 same as claim arguments above and Shakib and Yoshiyama and Bulusu do not explicitly teach ... including maintaining the at least one column of the second set of columns in another portion of cache. Wilkes does teach this limitation at parg. 62, 64 and fig. 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to improve the rate at which the insertion point in the cache metadata structure may be found at parg. 65, lines 1-3.

As per claim 16 same as claim arguments above and Shakib and Yoshiyama and Bulusu do not explicitly teach ... further including sizing the another portion of cache depending on the size of the at least one column of the second set of columns. Wilkes does teach this limitation at parg. 62, 64 and fig. 2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to improve the rate at which the insertion point in the cache metadata structure may be found at parg. 65, lines 1-3.

**Contact Information**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Rayyan whose telephone number is (571) 272-1675. The examiner can normally be reached M-F: 8am - 4:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Susan Rayyan

August 20, 2006



JOHN COTTINGHAM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100